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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,605	01/27/2004	Bo Valdemar Vaaben	7784-000948	1393
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EXAMINER JOSEPH, TONYA S				
ART UNIT 3628		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/765,605

Applicant(s)

VAABEN ET AL.

Examiner

TONYA JOSEPH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☒ Claim(s) 1-10 and 32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-10 and 32 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claims 1 and 32 recite the limitation, "identifying a subclass of objects that are unsuitably rescheduled in the initial solutions". It is unclear if these objects have not been scheduled or have already been scheduled and the solutions are not optimal. For Examination purposes, Examiner is interpreting the objects to have not yet been rescheduled.
5. Claim 2 recites the limitation "the third algorithm" in line 2. There is insufficient antecedent basis for this limitation in the claim. For Examination purposes, Examiner is interpreting the application of a third algorithm as meeting the limitations of the claim.
6. Claims 3-10 contain the same deficiencies as through dependency and as such, are rejected for the same reasons.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 1, 6-7 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Slivka U.S. Pre-Grant Publication No. 2003/0225600 A1.

9. As per Claim 1, Slivka teaches receiving a disruption specification based upon an event (see para. 14), the disruption specification including data identifying the objects to be rescheduled (see para. 14-15);

receiving a request for rescheduling of the objects from a user (see para. 36);

grouping the objects in the disruption specification to be rescheduled into sub problems (see para. 7 and 46), wherein each said sub problem is defined by each one of the objects therein having the same original origin and destination (see para. 7);

applying a first algorithm to each sub problem without allowing varying the origin and destination of the objects in the sub problem(see para. 14 and 34), and reaching a plurality of initial solutions (see para. 46);

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identifying a subclass of objects that are unsuitably rescheduled in the initial solutions (see para. 46 and 47); and

applying a second algorithm for rescheduling the subclass that allows varying the original itinerary to generate rescheduling solutions for the subclass (see para. 47 and 51).

10. As per Claim 6, Slivka teaches the method of claim 1 as described above.

Slivka further teaches wherein the subclass of objects to be rerouted are identified based upon a suitably of rescheduling criteria (see para.46 and 52).

11. As per Claim 7, Slivka teaches the method of claim 6 as described above.

Slivka further teaches wherein identifying the subclass includes determining a cost for each rescheduled object and comparing the cost to a threshold (see para. 39-41).

12. As per Claim 9, Slivka teaches the method of claim 1 as described above.

Slivka further teaches wherein the rescheduling solutions include upgrading, downgrading, delaying, and offloading the objects (see para. 36, 47 and 50).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 2, 4 and 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Slivka U.S. Pre-Grant Publication No. 2003/0225600 A1 in view of Yu U.S. Patent No. 6314361.

15. As per Claim 2, Slivka teaches the method of claim 1 as described above. Slivka does not explicitly teach the limitation taught by Yu a third algorithm (see Col. 6 lines 17-65 and Col. 14 lines 26-45). It would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the method of Slivka to include the teachings of Yu to determine a more optimal solution.

16. As per Claim 4, Slivka in view of Yu teaches the method of claim as described above. Slivka further teaches excluding the subclass of objects from the objects that need to be rescheduled in the disruption specification (see para. 37 and 46) and applying a fourth algorithm to the remaining objects in the reduced disruption specification to determine rescheduling solutions for the remaining objects (see para. 47 and Fig. 3).

17. As per Claim 32, Slivka teaches receiving a disruption specification based upon an event (see para. 14), the disruption specification including data identifying the objects to be rescheduled (see para. 14-15);

receiving a request for rescheduling of the objects from a user (see para. 36);

grouping the objects in the disruption specification to be rescheduled into sub problems (see para. 7 and 46), wherein each said sub problem is defined by

each one of the objects therein having the same original origin and destination (see para. 7);

applying a first algorithm to each sub problem without allowing varying the origin and destination of the objects in the sub problem(see para. 14 and 34), and reaching a plurality of initial solutions (see para. 46);

identifying a subclass of objects that are unsuitably rescheduled in the initial solutions (see para. 46 and 47); and

applying a second algorithm for rescheduling the subclass that allows varying the original itinerary to generate rescheduling solutions for the subclass (see para. 47 and 51). Slivka does not explicitly teach the limitation taught by Yu, applying a third algorithm to said rescheduling solutions to remove selected ones of said rescheduling solutions, to create a set of optimal rescheduling solutions (see Col. 6 lines 17-65 and Col. 14 lines 26-45). It would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the method of Slivka to include the teachings of Yu to determine a more optimal solution.

18. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Slivka U.S. Pre-Grant Publication No. 2003/0225600 A1 in view of Yu U.S. Patent No. 6314361 in further view of Thangvall U.S. Pre-Grant Publication No 2003/0105656.

19. As per Claim 3, Slivka in view of Yu teaches the method of claim 2 as described above. Slivka does not explicitly teach the limitation taught by Thangvall third algorithm is an IP algorithm with a branch and bound technique

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(see para. 13). It would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the methods of Slivka and Yu to include the teachings of Thangvall to evoke a particular optimization technique.

20. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Slivka U.S. Pre-Grant Publication No. 2003/0225600 A1 in view of Yu U.S. Patent No. 6314361 in further view of Official Notice

21. As per Claim 5, Slivka in view of Yu teaches the method of claim 4 as described above. Slivka does not explicitly teach wherein the first and fourth algorithms are transportation simplex algorithms. Official Notice is taken that using transportation simplex algorithms to solve problems is old and well known. It would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the method of Slivka to include the teaching of Official Notice to achieve an optimized solution.

22. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slivka U.S. Pre-Grant Publication No. 2003/0225600 A1 in view of Official Notice.

23. As per Claim 8, Slivka teaches the method of claim 1 as described above. Slivka does not explicitly teach, wherein the objects are passengers traveling one or more legs between the origin and the destination. Official Notice is taken that the objects are passengers traveling one or more legs between the origin and the destination is old and well known. It would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the

method of Slivka to include the teachings of Official Notice in order to provide an optimization solution for disrupted passengers.

24. As per Claim 10, Slivka teaches the method of claim 1 as described above. Slivka does not explicitly teach wherein the second algorithm is selected from the group consisting of the Dijkstra algorithm and a K-shortest path algorithm. Official Notice is taken that using a Dijkstra or K-shortest path algorithm is old and well known. It would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the method of Slivka to include the teachings of Official Notice in order to alter the results of an optimization equation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TONYA JOSEPH whose telephone number is (571)270-1361. The examiner can normally be reached on Mon-Fri 7:30am-5:00pm First Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Hayes can be reached on 571 272 0847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Igor N. Borissov/
Primary Examiner, Art Unit 3628

Tonya Joseph
Examiner
Art Unit 3628